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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,871	05/11/2006	Hiroshi Sato	060347	3219
23850 7590 06/16/2008 KRATZ, QUINTOS & HANSON, LLP 1420 K Street, N.W. Suite 400 WASHINGTON, DC 20005				
EXAMINER				
UHLER, CHRISTOPHER J				
ART UNIT		PAPER NUMBER		
2837				
MAIL DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,871

Applicant(s)

SATO, HIROSHI

Examiner

CHRISTOPHER UHLIR

Art Unit

2837

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Receipt is acknowledged of applicant's amendment filed March 6, 2008. Claims 1-8 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims have been considered and are addressed below.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Koseki et al. (US 5,804,751).

Regarding claims 1 and 4, Koseki et al. discloses a resonance generation device and method of an electronic musical instrument having a digital signal processing unit (column 3 lines 43-44), for artificially creating a resonance in a computer. A key depression state detecting process is disclosed to determine whether a key in a specific predetermined or stored relation with a played key is already depressed or played when a key playing operation is performed (column 6 lines 30-34).

Koseki et al. further discloses a process for detecting a specific relation between played keys and depressed keys, when the key in a specific predetermined relation is determined to be depressed (column 6 lines 30-34).

Also disclosed is a process for generating musical sound of a played key and other keys in a specific predetermined relation, and generating a musical sound based on said specific relation (column 2 lines 32-38). Said depressed key is the sound generation source (column 4 lines 60-64).

In reference to claims 2 and 5, Koseki et al. discloses a device and method as stated above, where monaural resonances are generated through the use of a single analog signal and output through speakers (column 3 lines 47-51). Koseki et al. further discloses a variation in volume or sound intensity according to the depressed key (column 4 lines 18-21).

In reference to claims 3 and 6, Koseki et al. discloses a device and method as stated above where the volume of the resonance based on the relation between the key played and the key depressed is controlled (column 5 lines 65-67).

In reference to claims 7 and 8, Koseki et al. discloses a computer program product including a computer readable recording medium (column 3 lines 62-65) for executing a resonance generation method of an electronic musical instrument having a digital signal processing unit (column 3 lines 43-44), for artificially creating a resonance in a computer. A program code within the central processing unit (column 4 lines 2-4) detects a key depression state determining whether a key in a specific predetermined or

stored relation with a played key is already depressed or played when a key playing operation is performed (column 6 lines 30-34).

Koseki et al. further discloses said program code to detect a specific relation between played keys and depressed keys, when the key in a specific predetermined relation is determined to be depressed (column 6 lines 30-34).

Also disclosed is a means for generating musical sound of a played key and other keys in a specific predetermined relation, and generating a musical sound based on said specific relation (column 2 lines 32-38).

Response to Arguments

Applicant's arguments filed March 6, 2008 have been fully considered but they are not persuasive.

Applicant states, on page 2 of the response that "Koseki's resonant sound is not selective of depressed keys". However Koseki discloses that the "term 'resonant sound' means a sound generated by related strings or the like resonating with the vibrations of the set of strings or the like" (column 5 lines 12-14). It is further disclosed that a set of strings or the like is struck to generate sound (column 5 lines 10-12). Said set of strings or the like generate sound through the use of a user striking keys, as in a typical keyboard instrument (column 3 lines 32-37). A set of strings or the like is implied as being a limited number of strings or the like that generate sound, as in a chord. Therefore the resonant sound generated by related strings or the like would relate to a specific set of strings or the like. A different resonant sound would then be generated

by different related strings or the like relating to a different set of strings or the like (column 6 lines 26-37). Since a user depresses a specific set of keys to generate sound from said specific set of strings or the like, the resonant sound that is produced would be selective of the specific set of depressed keys. Therefore the Koseki reference properly reads on applicant's invention as claimed.

Although the damper in an acoustic piano lifts off of all the strings when the damper pedal is depressed, all strings do not generate sound when a user depresses a single key on the keyboard. Instead, the string corresponding to the depressed key resonates, along with specific strings that are associated with the harmonic frequencies of the resonating string corresponding to the depressed key. Other strings in the acoustic piano that do not experience similar harmonic frequencies therefore do not generate sound when a single key is depressed on the keyboard.

In reference to claim 2, Applicant states on page 3 of the response that it "cannot be inferred that a monaural resonance is generated from left-and right-hand speakers". However as cited in the previous and present office actions, Koseki discloses generating a single audio signal AD, where the audio signal AD is outputted through multiple speakers (column 3 lines 47-51). Since the output is generated from a single audio signal, it is a monaural audio signal. Further, the use of multiple speakers is typically designed in the art as a left and right speaker.

The sound intensity is further disclosed to be generated corresponding to a user depressing a key (column 4 lines 18-21). In order to measure a key velocity, different measurements of key position must be obtained with respect to time. A simple

calculation from the obtained key position data would then produce key velocity data. Therefore the sound intensity inherently corresponds to key position data of a depressed key.

In reference to claim 3, Koseki discloses an envelop generator 503 to control the volume or sound intensity of an electric signal (column 5 lines 65-67), where said envelop generator 503 controls said volume "depending upon the key velocity represented by the key-touch code" (column 5 lines 60-62). As stated above, key velocity is calculated by comparing different measurements of key positions with respect to time. It is further disclosed that said envelop generator 503 supplies data between key-on and key-off events (column 5 lines 56-60). Therefore the data supplied would be based on the relation between a current or played key position and the key depressed position.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER UHLIR whose telephone number is (571)270-3091. The examiner can normally be reached on Monday-Thursday 8:00am-6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER UHLIR/
Examiner, Art Unit 2837
June 9, 2008
/Lincoln Donovan/
Supervisory Patent Examiner, Art Unit 2837